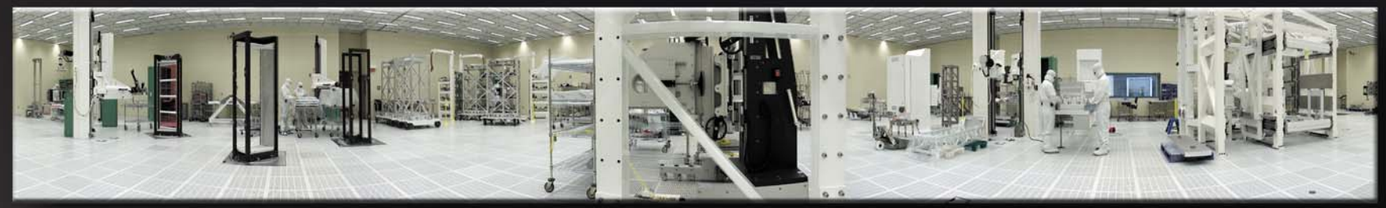
NATIONAL IGNITION FACILITY

SCIENCE IN THE NATIONAL INTEREST

The National Ignition Facility

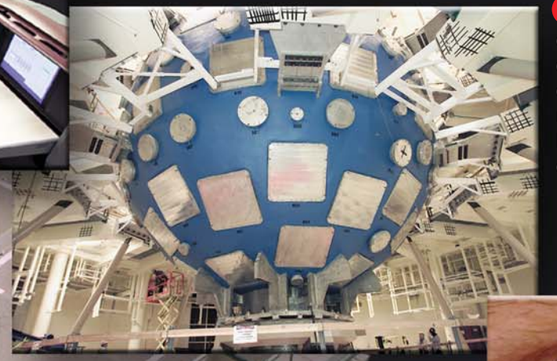
The NIF building complex was completed in September 2001. Spanning the length of two football fields, the facility will house 192 laser beams in two bays in precision-aligned and environmentally controlled conditions. The aerial photograph of the NIF facility has been combined with a computer-generated model revealing one bay of the laser system. NIF is scheduled to deliver its first laser light to the target chamber in 2003 and will be completed with all 192 laser beams operational in 2008. You are invited to follow the progress of NIF on our web site http://www.llnl.gov/nif.

7 A 360-degree panorama of the Class 100 clean room facility in the Optics Assembly Building.



6 The NIF Control Room controls all aspects of the laser system and target experiments.

5 At the center of the 10-meter-diameter target chamber, the 192 ultraviolet laser beams converge on the target.

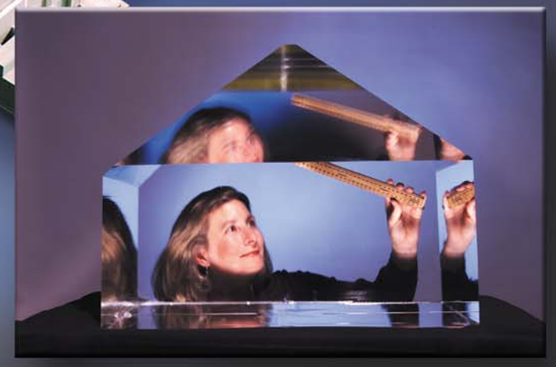


1 The NIF laser contains more than 3000 pieces of amplifier glass. They are cleaned and assembled into modules before automated guided vehicles install them into the laser system.

2 The cable plant delivers electrical power to the flashlamps in the amplifier system.

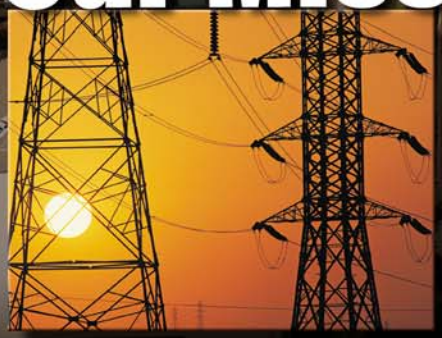
3 Beam tubes transport laser light to the target chamber.

4 Slices of giant crystals convert the infrared lasers to ultraviolet light before the beams enter the target chamber.



Our Mission

Science in the National Interest



Energy

NIF is designed to demonstrate fusion ignition and energy gain — two key milestones along the path to limitless fusion power production.

National Security

Data from NIF experiments will help scientists to understand the complex physics of nuclear weapons, ensuring the safety and reliability of our strategic deterrent.

Basic Science

NIF experiments can create immense pressures and temperatures similar to those in stars and supernova. These experiments bring the study of astrophysical phenomena, materials science, and nuclear physics into a controlled laboratory setting.

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